What Is Claimed Is:

1. An active noise controller equipped with a fan having a plurality of vanes and a duct for guiding wind from the fan, comprising:

a microphone which takes in acoustic noise in the duct;

rotation speed detector which detects rotation speed of the fan;

frequency calculator which calculates base and multiple frequencies determined by said rotation speed and vane numbers of the fan;

analyzer which analyzes the level of the acoustic noise taken in with the microphone for each of the base and multiple frequencies calculated by the frequency calculator in a time sequential manner;

phase controller controls the phase of the acoustic noise for each of the base and multiple frequencies in a time sequential manner; and

signal generator which generates a driving signal based on the analyzer, the frequency calculator, and the phase controller,

wherein the active noise controller is configured to drive a speaker with the driving signal generated by said signal generator.

2. The active noise controller according to claim 1,

wherein the signal generator is configured to include adder

which adds frequency signals of predetermined phases formed by the phase controller for each of the base and multiple frequencies.

3. The active noise controller according to claim 1,

wherein the phase controller is configured to control the signal generator so that the phase of a generated signal of each frequency corresponding to one of the base and multiple frequencies is shifted in order that a noise level analyzed at each of the base and multiple frequencies sent from the analyzer becomes smaller.

4. The active noise controller according to claim 1,

further comprising remaining noise discriminator which discriminates a noise reduced level based on a noise level at each of the base and multiple frequencies sent from the analyzing means,

wherein the active noise controller is configured to fix the amplitude value and the phase of the driving signal of a frequency at which the noise level is judged to be the noise reduced level.

5. The active noise controller according to claim 1,

further comprising a look-up-table which memorizes at least either of a phase compensation value corresponding to a variation in a frequency component of the acoustic noise or an amplitude compensation value corresponding to the frequency

characteristic of said active noise controller,

wherein the active noise controller is configured to compensate the driving signal referring to said look-up-table.

6. The active noise controller according to claim 1,

further comprising a temperature sensor which detects the temperature inside the active noise controller; and

a rotation speed control circuit which controls the fan rotation speed,

wherein the active noise controller is configured to change and/or control the fan rotation speed based on temperature information from the temperature sensor and the remaining noise discriminator.

7. The active noise controller according to claim 1,

wherein the fans are composed of a plurality of fans, and

each fan differs from the other fans in a product of the vane numbers of the fan and the fan rotation speed.

8. A projector equipped with a lamp, an image display device for forming an optical image by modulating the intensity of light from said lamp, and projection lens which projects said optical image, comprising:

a cooling fan having a plurality of vanes and for cooling the lamp;

a duct which guides cooling air flow from said cooling fan to the lamp;

a temperature sensor which detects the temperature inside the projector;

a rotation speed control circuit which controls the rotation speed of the cooling fan;

a microphone which takes in acoustic noise in the duct;

rotation speed detector which detects the rotation speed of the cooling fan;

frequency calculator which calculates base and multiple frequencies that are based on said rotation speed and vane numbers of the fan;

analyzer which analyzes the level of the acoustic noise taken in with the microphone for each of the base and multiple frequencies calculated by the frequency calculator in a time sequential manner;

phase controller which controls the phase of the acoustic noise for each of the base and multiple frequencies in a time sequential manner; and

signal generator which generates a driving signal based on the analyzer, the frequency calculator, and the phase controller,

wherein the projector is configured to change and/or control the fan rotation speed according to temperature information from the temperature sensor, and drive a speaker with the driving signal generated by the signal generator.

9. The projector according to claim 8,

wherein the signal generator is configured to include adder

which adds frequency signals of a predetermined phase formed by the phase controllor for each of the base and multiple frequencies.

10. The projector according to claim 8,

wherein the phase controller is configured to control the signal generator so that the phase of a generated signal of each frequency corresponding to one of the base and multiple frequencies is shifted in order that a noise level analyzed at each of the base and multiple frequencies sent from the analyzer becomes smaller.

11. The projector according to claim 8,

further comprising remaining noise discriminator which discriminates a noise reduced level based on a noise level at each of the base and multiple frequencies sent from the analyzer,

wherein the projector is configured to fix an amplitude value and a phase of the driving signal of a frequency at which the noise level was judged to be the noise reduced level.

12. The projector according to claim 8,

further comprising a look-up-table which memorizes at least either of a phase compensation value corresponding to a variation in a frequency component of the acoustic noise or an amplitude compensation value corresponding to the frequency characteristic of said projector,

wherein the projector is configured to compensate the

driving signal referring to said look-up-table.

13. The projector according to claim 9,

wherein the phase controller is configured to control the signal generator so that the phase of a generated signal of each frequency corresponding to one of the base and multiple frequencies is shifted in order that a noise level analyzed at each of the base and multiple frequencies sent from the analyzer becomes smaller.

14. The projector according to claim 9,

further comprising remaining noise discriminator which discriminates a noise reduced level based on a noise level at each of the base and multiple frequencies sent from the analyzing means,

wherein the projector is configured to fix the amplitude value and the phase of the driving signal of the frequency at which the noise level was judged to be the noise reduced level.

15. The projector according to claim 9,

further comprising a look-up-table which memorizes at least either of a phase compensation value corresponding to variation in a frequency component of the acoustic noise or an amplitude compensation value corresponding to the frequency characteristic of said projector,

wherein the projector is configured to compensate the driving signal referring to said look-up-table.

16. The projector according to claim 13,

further comprising remaining noise discriminator which discriminates a noise reduced level based on a noise level at each of the base and multiple frequencies sent from the analyzing means,

wherein the projector is configured to fix the amplitude value and the phase of the driving signal of the frequency at which the noise level was judged to be the noise reduced level.

17. The projector according to claim 13,

further comprising a look-up-table which memorizes at least either of a phase compensation value corresponding to variation in a frequency component of the acoustic noise or an amplitude compensation value corresponding to the frequency characteristic of said projector,

wherein the projector is configured to compensate the driving signal referring to said look-up-table.